TREES MAGAZINE

Grotesque and Picturesque Eucalyptus rostrata — Pacific Palisades, California.

Western Shade Tree Conference—Oakland, Calif.—May 5-8.

Depositing of Spray Chemicals — **George E. Tirrell**

Propagating Some Rare Plants From Seed — **Roger G. Coggeshall**

March-April 1954 — *The Journal of American Arboriculture* — Vol. 14. No. 3

TOUGH

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NATIONWIDE SALES AND SERVICE

TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., 7621 Lewis Rd., Olmsted Falls, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With .... EDW. SCANLON

■ A note from ARNOLD BURNELL, the CALIF. DIV OF HIGHWAYS SKINNER, back in THE 30'S, is DOING OK after an OPERATION at a VETS HOSPITAL. Drop HIM A LINE you CALIFORNIAITES—at MANKATO, MINN. —he'll be GLAD TO HEAR FROM YOU. Thanks for the 'COT SCIONS ARNOLD.

■ **A VERY HIGH CLASS AD was noted recently in a LOCAL SHOPPING PAPER — it read — "T R E E S S A W E D DOWN, OR TRIMMED"—to the point AT LEAST.**

■ You will ALL BE PLEASED to learn of AN HONOR bestowed on FRANK PIPAL, FORMER CITY FORESTER AT OMAHA. The Daughters of the American R e v o l u t i o n have SELECTED FRANK for an AWARD OF MERIT "for outstanding service and influence in the American way of life"—a FINE TRIBUTE to a FINE GUY.

■ **Two of our SECRET OPERATIVES have sent in CODED REPORTS on the DISTRIBUTION OF TAXODIUM DISTICHUM — X-6 in Kansas take note. CECIL B E C H T L E, BETTENDORF, IOWA, says he has been USING THEM FOR 15 YEARS — "the flora of the South meets the North at Wild Cat Den in Muscatine County."**

FRANK KARPICK AT BUFFALO reports AT LEAST A DOZEN DOING WELL there, and A RUMOR of one growing either at ST. CATHERINES or HAMILTON, ONTARIO. THANKS for these INTERESTING REPORTS — are there ANY MORE?

■ If any of YOU LADS are WOOD SAMPLE SAVERS, I have about FOUR PIECES of PRUNUS SERRULA, the RED BARKED C H E R R Y, that the FIRST COMERS can have. Its the inch and a half trunk of a NICE SPECIMEN that DIDN'T CATCH.

■ **MARCH 1st was quite a 22nd WEDDING ANNIVERSARY at the RANCHO —15 INCHES of snow—snowbound. It was a WET SNOW and it MASKED ALL TREES and shrubs giving them all a GHOSTLY, GROTESQUE FORM. Its certainly a GORGEOUS SIGHT in spite of all the TROUBLE AND DISRUPTION it caused.**

■ For FIVE DAYS we were SNOWBOUND, SNOW-BALLED and SNOW-HAPPY—to the tune of ABOUT 25 INCHES of the fluffy stuff.

■ **BUT anyway, ST. PATRICKS DAY was bright and SUNNY and WARM.**

■ At HARTFORD, in February, RUSH MARSHALL told us of the DEATH OF STAN BROMLEY. YOU ALL KNEW STAN who had been THE ENTOMOLOGIST for the BARTLETT CO., for many years. He was a FINE GENTLEMAN and a GOOD FRIEND and we will ALL MISS HIM GREATLY.

■ **I WISH we could SOMEHOW OR OTHER STIMULATE SOME DISCUSSION on the MERITS AND DEMERITS of a NUMBER OF TREES that, to date,**

Dr. Stanley Bromley

HAVE NOT HAD THE USAGE that maybe they SHOULD HAVE HAD. Why not WRITE IN YOUR EXPERIENCES, from all ASPECTS OF CULTURE, on the VALUE OF a CERTAIN TREE— then, we will MAKE UP A SERIES, to run in SUBSEQUENT ISSUES, with YOUR LETTERS as the MEAT OF THE DISCUSSION. For example:

■ WE KNOW we must go FURTHER AFIELD for TREES TO USE in the COMPLEX SITUATION that a combination of disease, POOR SELECTION, M O D E R N SPACE LIMITATIONS, and NEED FOR DIVERSITY OF SPECIES has created. Lets take for our number one diagnosis the SYCAMORE M A P L E (ACER PSEUDOPLATANUS) and its SEVERAL INTERESTING VARIETIES.

■ **Personally I LIKE THIS TREE very much. It has a HANDSOME FORM and NICE FOLIAGE, decorative flower and fruiting h a b i t s WITHOUT BEING MESSY. Like every tree IT HAS GOOD POINTS, and also like every tree IT HAS BAD ONES. Anyway WHY NOT SIT DOWN now and give us YOUR REACTIONS to its BEHAVIOR in your area. This CAN BE EXTREMELY VALUABLE DATA—if you lads COOPERATE.**

■ Please D O N ' T F O R G E T to SIT DOWN and JOT DOWN some CULTURAL FACTS on the values of the SYCAMORE MAPLE as a STREET AND HOME O R N A M E N T A L. Lets make this a VALUABLE SERIES on TREE USE.

■ WE REGRET also to HEAR OF THE PASSING of HAL BENNETT, the big, g e n i a l president of the ARBORIST SUPPLY CO., of Rye, N. Y. HAL WAS A FAMILIAR F I G U R E at SHADE TREE CONFERENCES for the past many years — he MADE MANY FRIENDS who will MISS THIS GENIAL CHAP. Our SINCEREST SYMPATHY is extended TO BONNIE.

CONTENTS

Vol. 14 Bi-Monthly No. 3

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TREES MAGAZINE

7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

CONTENTS

	Page
Editorial Let's Revive Arbor Day	4
Street Tree and Utility Conference	5
Calendar of Events	5
Fred Potts Receives National Award	5
Depositing of Spray Chemicals; Hydraulic Method vs. Air Method *by George E. Tirrell*	6
Halvorson Leads Rotary Club Essay Contest	8
Propagating Some Rare Plants From Seed *by Roger G. Coggeshall*	9
Western Shade Tree Conference—Oakland	12
Authors and Books	22

■ ED L U N D B E R G, of the FRUIT GROWERS OF CHESTER COUNTY, has been KNOCKED OUT for the PAST MONTH with the FLU BUG. I know HOW YOU FEEL ED, those rascals have BEEN CHASING ME in and out of the sack FOR THE PAST 6 WEEKS —tough to shake.

■ **We heard SOME GLOWING WORDS about A L B I Z Z I A JULIBRISSIN ROSEA, as a tree now READY FOR DISTRIBUTION in the CONNECTICUT AREA, at the February meeting of the CONN. TREE PROTECTION ASSN. It isn't even a good tree WHERE ITS HARDY—California and southern states —and is SELDOM USED because there are TOO MANY GOOD TREES.**

■ ANOTHER AGENT r e p o r t s on TAXODIUM DISTICHUM JOHN D. KENDIG, nurseryman of MANHEIM, PA., (southeast Penna.). JOHN SAYS they have a NUMBER OF FINE BALDIES around there — they range from 8" TO 16" D.B.H. and go from 40" TO 60" FEET—Thanks JOHN every little BIT HELPS.

■ **DON'T FORGET children—the LAST FRIDAY IN APRIL is Arbor Day in ELEVEN STATES — NATIONAL ARBOR DAY THAT IS; too bad THIS SPLENDID PROGRAM c a n n o t be pushed—ITS PATHETIC how silly we all are—NOT JUST ME—to let this basic PUBLICITY SPRINGBOARD die aborning—ELEVEN STATES—Maine, Mass., Rhode Island, Conn., New Jersey, Ohio, Indiana, Illinois, Wisconsin, South Dakota and Nevada. WHAT A BEAUTIFUL START.**

■ The FIRST REALLY good ARMSTRONG RED MAPLES rolled out of SCANLONS TREE FACTORY this spring. They were BEAUTIFUL STUFF 6/8 feet. Also got a start on others in the RED M A P L E SELECTION SERIES.

Observe NATIONAL ARBOR DAY Last Friday in April

March-April, 1954 **Journal of the National Arborist Association** Vol. 14—No. 3

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

LETS REVIVE ARBOR DAY

Years ago TREES started a movement to establish a single observance date for Arbor Day throughout the U. S. A. —or even the world.

Well, it got off to a good start. A goodly number of people, with the vision to realize the value of a national arbor day, headed up the movement in a number of states, and started pushing for legislation, or changes therein, to establish the Last Friday in April as Arbor Day. Well, it worked pretty good. In fact to the point that—just imagine this—imagine, in eleven states legislation was introduced either to establish or change the date of Arbor Day to the Last Friday in April. This required a lot of hard work by a good many people—a lot of people who should receive a big pat on the back from the whole field of horticulture—a pat they will never get, if we interpret correctly the stuffiness that pervades this field of human endeavor.

The movement that resulted in establishing the Last Friday in April as Arbor Day in Maine, Massachusetts, Connecticut, Rhode Island, New Jersey, Ohio, Indiana, Illinois, Wisconsin, South Dakota and Nevada, was intended as a vehicle through which a great national publicity program could be launched. Such a program would have a terrific impact on the thinking nationally in respect to the values and benefits to be derived from association with and the proper use of plants—to put it briefly. And the best part of the whole thing is that it probably would not cost more than a thin dollar. The press, radio, TV and other media would, if fed the necessary publicity be happy to give space and time to this clean, healthful program for the betterment of the entire nation, morally and esthetically.

Through some quirk, in our present day sense of values, maybe this effort to establish a program that could reach into the schools and create sound values there, did not look like it would produce any fast bucks so it was passed over and publicity schemes with more commercial, "business-like" themes were evolved. How wrong they are only time will tell, but it is sad to have to stand by knowing full well that time is coming as sure as day follows night. In fact our reluctance to think and act scientifically in our approach to plant use problems has already shown up, glaringly, in the vast breakdown of the old sentimental use of trees on city streets, and for that matter in almost all of the ornamental uses to which trees have been put.

An about face is being made by a number of progressive City Arborists. They have had the old mistakes dumped in their laps and they are doing something about it. Maybe they will be the nucleus of a new movement to reestablish Arbor Day as the Moses that will lead Horticulture out of the dark ages. Certainly no other group seems progressive enough at this time to realize what is happening.

"Street Tree and Utility Conference" to be Held in Cleveland

Final arrangements and program details are now going forward for the "Street Tree and Utility Conference" to be held March 3, 4 and 5, 1955 in Cleveland.

The conference will be held under the joint sponsorship of the following three organizations;

The Transmission and Distribution Committee

EDISON ELECTRIC INSTITUTE

John W. Anderson, Chairman (Philadelphia Electric Co., Philadelphia, Pa.)

The Shade Tree Selection Committee

NATIONAL SHADE TREE CONFERENCE

Edward H. Scanlon, Chairman (Commissioner of Shade Trees, Cleveland, Ohio)

The Street Lighting Committee

ILLUMINATING ENGINEERING SOCIETY

Kirk M. Reid, Chairman (The General Electric Co., Nela Park, Cleveland, Ohio)

The purpose of the conference is to study the development of the necessity for a long range planning program designed to evolve a plan whereby trees and utilities may harmoniously occupy streets and highways. Considerations of contemporary clearance problems are not germane.

The conference has been enthusiastically endorsed by many of the outstanding City Arborists of the country including; Fred R. Thomason, Chicago; Walter I. Meyers, Detroit; Joseph A. Dietrich, Greenwich; M. W. French, Richmond; Carl Fenner, Lansing; John W. Batson, Washington; Griggs Waring, Milwaukee; Joseph A. Sweeney, Toledo; Harry E. Turner, East Orange; Frank E. Karpick, Buffalo; John C. Kenealy, Ardmore, Pa.; Herbert J. Cran Jr., New Haven; Fred W. Roewekamp, Los Angeles and Edward Connell, Stamford.

Invitations will be extended to all persons and groups interested in the problem, including communication companies, state and municipal foresters, roadside engineers, arborists, and nurserymen. The program will be built along the lines of discussions by each of the three major groups. Several nationally known speakers have already indicated their willingness to participate.

The papers and summary recommendation will be published in the proceedings of the conference, and will be avaible to anyone interested in obtaining a copy.

It is the expressed opinion of all persons contacted so far that the potential of this conference, to the resolving of what is now a very serious, expensive and certainly an undesirable situation, is unlimited and should be the vehicle whereby a spirit of cooperation can be created, with the result that greater beauty, and the ultimate in electrical service will emerge from the proper use of streets and roadsides.

Fred Potts Receives National Award

For recognition of "Exceptional Services to the Cause of Conservation" the Nash Conservation Awards Program have recently announced such an Award to Samuel Frederick Potts, for 1953.

Fred, as you all know him, was given this justly deserved honor for his outstanding work in the development of concentrated sprays for use by airplanes helicopters, low gallonage sprayers and mist blowers. Some of the developments leading to the award, for treatment with concentrated sprays, follow:

1. Over 10 million acres of forests in the United States and Canada, since 1944.
2. Millions of valuable shade trees, using mist blowers.
3. Millions of acres in this country and abroad to control flies, mosquitoes and other pests of man and livestock. This has prevented or reduced disease and suffering in tens of millions of people in this country and abroad and has saved the lives of hundreds of thousands of others; has increased food production, and has made numerous areas habitable.

SOIL · · · FOREST · · · WATER · · · FISH · · · WILDLIFE
IN RECOGNITION OF EXCEPTIONAL SERVICES
TO THE CAUSE OF CONSERVATION
NASH MOTORS
IS PRIVILEGED TO PRESENT TO
Samuel Frederick Potts
THIS CERTIFICATE OF MERIT IN
THE NASH CONSERVATION AWARDS PROGRAM
FOR 1953
COMMITTEE ON AWARDS

Calendar of Events

Canadian Chapter, National Shade Tree Conference, meets April 9th in the Unitarian Church, 1758 St. Clair Ave., W. Toronto, 8:00 p. m., and April 10th in the Habitant Room, Old Mill, 21 Bloor St. W. Toronto.

Western Chapter, National Shade Tree Conference, Hotel Claremont, Oakland, California, May 5-8, 1954.

National Shade Tree Conference, Hotel Haddon Hall, Atlantic City, New Jersey, August 30-September 3, 1954.

Thirteenth Annual Short Course on Roadside Development, Columbus, Ohio, October 5-8, 1954.

4. The treatment of several million acres of cotton annually during the past few years with low gallonage rigs and airplanes.
5. Several million acres of cereal and forage crops and pastures, including grasshopper infested areas, have been treated.
6. Tens of thousands of acres of fruit orchards, using mist blowers.
7. As much as 20 million acres of small grains, corn, pastures, and brush are treated annually with herbicides, using low gallonage concentrate rigs and aircraft.

PLANT AMERICA—WISELY

Traces...

DEPOSITING OF SPRAY CHEMICALS: HYDRAULIC METHOD vs AIR METHOD

By George E. Tirrell
Mist Spray Consultant
Greenfield, Mass.

An agricultural or ornamental sprayer is normally purchased by an individual for the express purpose of controlling insect pests and plant disease. After the purchase of the machine by anyone but an expert in spray application the first consideration is how to use it properly for the best results.

Chemicals for the job at hand must be purchased and used according to directions printed on the container. A good example would be to say that 5 lbs. of a certain chemical added to 100 gals. of water is recommended as a dilute spray to be applied uniformly over a given area. This type of spray mixture is often referred to as a 1 X concentration.

Such formulations are the product of years of research by Chemical companies, Universities, Federal Depts., and manufacturers of spraying equipment and is designed for maximum control at a minimum of cost and the greatest degree of safety.

As new chemicals are discovered extensive experimenting is done before a recommendation for use is made public.

This combined effort to serve the public satisfactorily indicates that a veritable army of skilled scientists are constantly at work to safe guard the hydraulic spray program.

Several years ago someone conceived the idea that a more economical spray program could be realized if much of the heavy liquid hauling experienced when using the hydraulic method was eliminated.

This economy has been realized in varying degrees by concentrating the spray mixture and using air instead of hydraulic force as a carrier of the chemicals. For example 5 lbs. of chemicals added to 10 gals. of liquid is referred to as a 10 X concentrate.

Instantly one realizes that this type of spray mixture is a departure from the carefully designed 1 X concentrate and cannot be used by the hydraulic method with economy, safety or any expectancy for better pest control.

However the liquid content of a hydraulic spray mixture seldom has any bearing on pest control. It is used solely to dilute the chemical contents for uniform distribution to a given area.

Therefore, if by any other means the same chemicals can be diluted and uniformly distributed over the same given area, pest control results should be uniformly satisfactory.

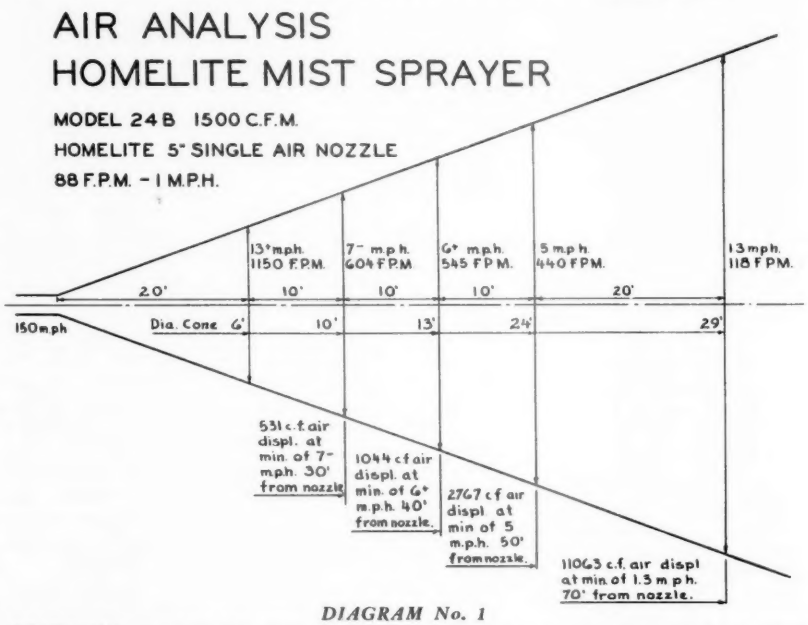

AIR ANALYSIS
HOMELITE MIST SPRAYER
MODEL 24 B 1500 C.F.M.
HOMELITE 5" SINGLE AIR NOZZLE
88 F.P.M. - 1 M.P.H.
13+ m.p.h. 1150 F.P.M.
7- m.p.h. 604 F.P.M.
6+ m.p.h. 545 F.P.M.
5 m.p.h. 440 F.P.M.
13 m.p.h. 118 F.P.M.
20'
10'
10'
10'
20'
150 m.p.h.
Dia. Cone 6'
10'
13'
24'
29'
531 c.f. air displ. at min. of 7- m.p.h. 30' from nozzle
1044 c.f. air displ. at min. of 6+ m.p.h. 40' from nozzle.
2767 c.f. air displ. at min of 5 m.p.h. 50' from nozzle.
11063 c.f. air displ at min. of 1.5 m.p.h. 70' from nozzle.

DIAGRAM No. 1

***OBJECTIVE:** To show the pattern and effective range of a spreader type round air nozzle discharging air at 150 M.P.H. and 1500 C.F.M. at the outlet.*
Velocity readings taken at the center line by use of a fan type velometer. Distance from air nozzle outlet. 20, 30, 40, 50 and 70 feet. Velocity reduced from 150 M.P.H. at outlet to + 13 M.P.H. at 20 feet and 1.3 M.P.H. at 70 feet.
Expansion of the air stream is determined by starting from outside the manufactured air stream and moving the velometer toward the center line. As soon as air movement is indicated by the velometer the location is marked and the same procedure is recorded from the opposite side of the moving air.
Because spray liquids injected into the air stream follow every vestige of manufactured air movement, it is not necessary to make velocity readings at this point. Only the recording of air movement. This is satisfactorily demonstrated on illustration 3 - 4 dealing with droplet deposit. The expansion of the air stream from a 5-inch round outlet at 20 feet measured 6 feet in diameter, at 30 feet—10 foot diameter—at 40 feet—13 foot diameter —at 50 feet—24 foot diameter and at 70 feet had increased to 29 feet in diameter.
Moving air displacement is figured by considering a section or frustum of the cone. Considering a 10 ft. section or frustum starting at 20 feet from the nozzle the small end of this frustum measures 6 feet in diameter while the large end of the 10 ft. frustum at 30 feet away from the nozzle measure 10 feet in diameter and the displacement is 521 C.F. of air moving at a minimum velocity of 7 M.P.H. A 20 ft. long section or frustum starting at 50 feet from the nozzle has a diameter of 24 feet and at 70 feet a diameter of 29 feet representing an air displacement of 11063 C.F. of air at a forward movement of 1.3 M.P.H. at center line.
A 200 micron droplet requires 2½ M.P.H. of air to remain in forward motion 100 M 2/3 M.P.H. 80 M—½ M.P.H.—50 M 1/5 M.P.H.—40 M 1/10 M.P.H.—20 M 1/37 M.P.H.
Information is available with reference to the number of droplets of different micron size contained in a gallon of liquid.
With an air analysis such as pictured on illustrations 1 and 2 available and combined with a drop size analysis of the liquid jet or injector being used, air dilution and deposit areas may be properly determined.

For several years considerable work has been done quite satisfactorily by the mist spray method, using air as a carrier for the spray chemicals.

As time goes on more and more people are becoming interested in this departure from the hydraulic method, but as of now no organized group of scientists are contributing any great amount of experimental work for its betterment. Most of its success has been accomplished by the trial and error method. This method is extremely hazardous, because once the spray mixture has become diluted by air separation it becomes practically invisible unless viewed under bright lights at night at which time it resembles a dense fog.

While this method of ascertaining deposit information and air pattern analysis is helpful to some extent, it has no basic value to the entomologist wishing to make recommendations for the correct method of chemical applica-

tion to control certain pests while using a mist sprayer.

Rules for proper mist spray application read as follows:

Know this:

1. Amount of air. (Volume, velocity and pattern.)
2. Size of spray droplets. (Average micron size.)
3. Concentration of spray chemical relative to amount of air and size of droplet.
4. Use large droplets to combat wind conditions and dangerous floating deposit. (Lower the concentration relative to drop size.)
5. Use contour air nozzles for distance. Use short, shaped and multiple air nozzles for spread.

Each item of the rule for mist spray application is supported by basic fact as follows:

1. Air volume and velocity and pattern of the expanding air must be a known quantity otherwise no advice could be offered relative to the amount of liquid concentrate spray that a certain machine can effectively deposit or where it will be deposited. Also of paramount importance is the amount of air dilution the spray material may be subjected to before deposit.
2. Size droplets. Unless the droplet size of liquid injected into the air stream is known there is no way of telling the amount of chemical which will be deposited in a given area because small droplets travel with less force applied than do larger droplets.
3. Concentration of spray chemical. The spray chemical must be concentrated in proportion to the droplet size and the air volume and velocity. For example:
   A 12 X concentrate will deposit control depth of chemical for a much greater distance than a 6 X concentrate when used through the same injection nozzles and in the same air stream. This is because the droplets of 6 X concentrate would not contain the same amount of chemical as would the 12 X droplets and while the distance of travel would be approximately the same the chemical deposit would vary for this reason.
4. Use large droplets to combat wind conditions. Because large droplets cannot have the same floating quality of smaller droplets the large droplet can be forcefully propelled through cross winds up to the mechanical limitations of the sprayer.
   When this type of application is practiced with a mist sprayer, concentration of the spray chemical should be reduced to avoid waste and chemical burn. Also for best results with large droplets application of the spray should be made from opposite sides of the foliage being sprayed rather than one side only as can be accomplished with smaller, lighter mist spray droplets that deposit by settling rather than by impingement.
5. Air Nozzles. The mist sprayer is most versatile; and inexpensive sheet metal air nozzles of different shapes and sizes will adapt the sprayer to many different jobs.

The nozzle referred to as the contour nozzle is especially designed for straightening the air and will project spray droplets to greater distances with a minimum of air dilution. (See analysis comparison on illustrations.)

(Continued on Page 14)

AIR ANALYSIS
HOMELITE MIST SPRAYER

MODEL 24B 1500 C.F.M.

TIRRELL NOZZLE WITH STRAIGHTENER - 4"

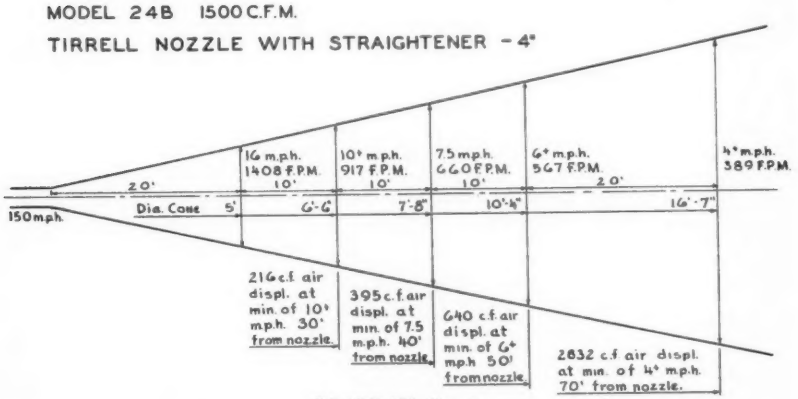


DIAGRAM No. 2

***OBJECTIVE:** To demonstrate the versatility of mist applicators by showing the pattern of a different type air nozzle designed for greater distance (a narrower cone).*
By comparison with Diagram No. 1 this test shows that at 20 feet from the nozzle the velocity is 16 M.P.H. (an increase of 3 M.P.H. over No. 1) and the expansion of the air stream has reduced from 6 to 5 feet and at 70 feet from the outlet the velocity is 4 M.P.H. instead of 1.3 M.P.H. the diameter of expansion is 16 feet 7 inches instead of 29 feet and the air displacement is 2832 C.F. as compared to 11063 C.F. as in Diagram No. 1.
If liquid injection satisfactory in an air stream as pictured in Illustration No. 2 were used in an air stream such as is pictured in Illustration No. 1, it would be equivalent to diluting the chemical by 5 times more liquid than recommended for a satisfactory 1 X dilute spray. No better control results can be expected than would be realized by such a diluted formulation.

DROP SIZE ANALYSIS
TIRRELL AIR NOZZLE AND 1 3/4" SPINNER JET

10 lb. PUMP PRESSURE 1 GAL. IN 1.75 MIN.

FUEL OIL PLUS CYLINDER OIL

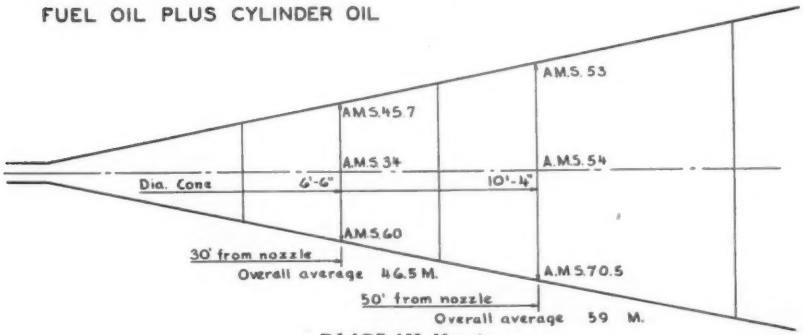


DIAGRAM No. 3

***OBJECTIVE:** To show drop size analysis and deposit pattern. Glass plates treated with dry film to retain droplet size and shape were placed across the air stream. One plate at center line and one at the outer edge indicated by air movement.*
Three plates were located 30 feet from the nozzle and three plates were located 50 feet from the nozzle for these comparison tests. The overall average micron size at 30 feet was 46.5 M while at 50 feet the average size was 59 M indicating that a heavier deposit of material was being made at that distance.

Halvorson Leads Rotary Club Essay Contest

Three topics were assigned to participants, 1, The Value of Trees; 2, Learn Your Trees, and 3, The Significance of Arbor Day.

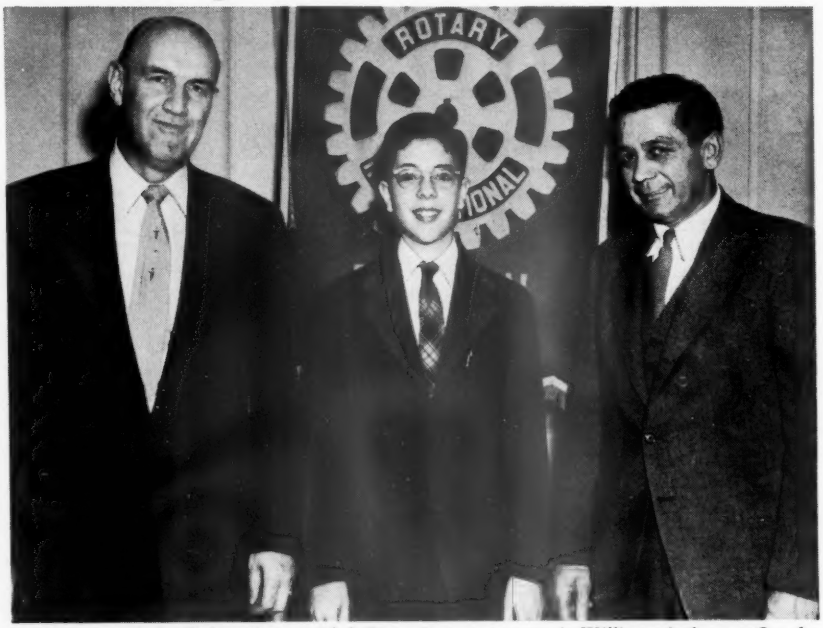
An outstanding Conservation program was culminated recently in Pittsfield, Massachusetts with the selection of three prize winning essays written by boys of the eighth grade of the Dalton, Massachusetts schools.

The essay contest was instigated by Craig L. Halvorson, arborist and National Shade Tree Conference member, and sponsored by his Rotary Club. The three top essays were sent to Professor Gordon King of the University of Massachusetts and were judged by Professor King and Dr. Malcolm McKenzie.

The winner was William Anderson, shown in the picture, Richard Johnson and Bruce Cronnell were the runnersup. After reading the three fine essays, we think you will agree, the judges had a difficult job selecting a winner.

The Dalton Rotary Club is planning a fine Arbor Day program following their April 21st meeting.

The three essays are reproduced here, and we believe this fine contest should inspire other arborists who belong to service clubs like Rotary, Kiwanis and Optimists to start similar campaigns. The contest will be an annual affair, with a plaque honoring the winner hung in the headquarters of Rotary.



The winner of the Dalton Rotary Club Essay Contest, center, is William Anderson. On the left is Craig Halvorson sponsor of the contest and National Shade Tree Conference member. To the right is Thomas D'Agostino, President of the Dalton Rotary Club.

Courtesy Berkshire Evening Eagle

The Value of Trees

By William Anderson

First Prize

There are many things in our daily lives that are so common that we accept them with little thought. Unfortunately, this is true in the case of trees. Since they serve us in so many ways, trees deserve to be known and appreciated.

As far back as 986, trees from American forests were being harvested by Eric the Red and his Viking followers from Iceland, which was without large forests. When the first Massachusetts Colonists stepped off the Mayflower, they too, found the abundance of America's forests a ready resource.

Nothing in all the plant world, is so highly rated from the standpoint of beauty and practical use, as the tree. It would be very hard to decide which is the most beautiful; the evergreen, the fruit-bearing, the flowering, or the shade tree. If I were to list all the practical uses of trees, Crane & Company, Inc., would have to work overtime to keep me supplied with paper, but to mention a few, we have timber and timber products, the most important of the fruits, nearly all nuts, coffee, chocolate, the cocoa, nutmeg, mace, cloves, allspice, cinnamon, sago, maple syrup, olive oil, almond oil, coconut oil, quinine, camphor, cork, dyes, and rubber, as well as turpentine, various gums, balsams and essences.

Even if we could dispense with these products and by-products of trees, our welfare would be seriously threatened by their destruction as they perform indispensable services to the land itself.

Trees and grasses are both responsible for the prevention of erosion. Erosion happens so gradually that we hardly notice it. Perhaps that is why we have been so slow in realizing what has happened to our land. Every raindrop on unprotected soil leaves a scar. The following facts tell the story: One hundred million acres—equal to three states the size of Michigan—have been reduced to uselessness since we began to farm this country. Two hundred million more acres are slowly reaching this state. A half million acres are going to ruin each year, and each year one million tons of soil flow past Omaha in the Missouri River. That's enough soil to fill a wagon train circling the earth 23 times.

The day of reckoning is coming closer with each rain, each gust of wind. Our soil experts tell us we have no more land to lose. They say that if the present erosion rate continues unchecked we will have to accept a lower standard of living within fifty years.

This fate can be avoided. We know that handled one way, a land may lose several inches of topsoil in two or three years. Handled another way, the land may hold that topsoil for several thousand years. We must see to it that soil and water are managed the conservation way. Trees figure into this program in a large way so we must not underestimate the value.

Without a sufficient number of trees covering the mountains, the foothills and even the lowlands, the land soon becomes a barren waste upon which it is no longer possible for men to live. This is the old, old story in Palestine, Greece, Rome, China, Japan and our own New England. When men enter a new land and it is usually heavily wooded with sturdy trees and deep, rich roil but as the people increase in

(Continued on Page 16)

Propagating Some Rarer Plants from Seed

By Roger G. Coggeshall
Assistant Propagator,
Arnold Arboretum

Seed propagation, as all nurserymen know, is by far the easiest and cheapest way to produce saleable plants, assuming, of course, the plants to be propagated come true from seed. Taking this fact into consideration, let us consider some methods used to produce some of the more uncommon plants. Plants that have been recommended as new additions to the group of plants that are now already used in street tree plantings, specimen plantings, etc.

First, let us consider the method used at the Arnold Arboretum in handling seed that requires no pre-treatment, such as seed of the following plants:

Cercidiphyllum japonicum
Evodia danielli
Evodia hupehensis
Phellodendron amurense
Phellodendron lavellei
Phellodendron sachalinense

For an example of the procedure used, let us use the seed of Phellodendron amurense. The fleshy fruit of this species is collected during the latter part of October, brought into the greenhouse and cleaned immediately. We use a machine called a Waring Blendor, for cleaning the fleshy fruits. This is the same machine that is used by housewives in every day cooking. However, we have made the following modifications. We found that the steel blades the machine comes equipped with are much too sharp for cleaning seeds, they will just cut the seeds all to pieces. To overcome this, a piece of rubber cut from a truck tire was inserted. This piece of rubber was 1½" square and was bolted onto the shaft, so that it spun in a horizontal plane. The rubber is tough enough to stand up under the terrific battering it takes, and yet it does not injure the seed. It was found that a proportion of 2/3 water to 1/3 fleshy fruit is necessary to give good clean seed with the least injury to the seed.

Once the seeds have been cleaned in the Waring Blendor, they are stored dry until spring, at which time they are planted out in prepared beds.

In regard to Cercidiphyllum and Evodia, the seed of which dehisce, we collect the seed capsules just prior to their dehiscing, place them on sheets of paper in the greenhouse to open, store the seed in a dry place during winter and then sow it outdoors, in prepared beds, in the spring.

Then we have plants, the seed of which require a cold stratification period before they will germinate. This treatment is necessary to overcome internal dormancy in the seed. This type of dormancy is probably the commonest and is caused by internal conditions of the stored food or the embryo itself.

Inside the seed certain chemical changes in the stored food, or in the embryo, must take place before germination can begin. Also, the embryo is sometimes unusually small at the time the seed is dispersed, so that it must undergo some growth before germination can begin. (1)

To overcome this internal dormancy, we expose the seed to an abundant supply of moisture and oxygen, at a constant temperature of 41°F., for a period of three months.

Examples of seeds with this type of dormancy are listed below with the recommended treatment for stratification.

Three Months 41°F.
Acer capillipes
Acer griseum
Acer rufinerve

Three Months 41°F.
Acer tartaricum
Acer triflorum
Acer truncatum

Four Months 41°F.
Carpinus cordata
Carpinus japonica
Carpinus orientalis
Carpinus turczaninowi

Seed requiring low temperature stratification are handled as follows. Seeds are collected from the latter part of September, through the early part of October. Following collection, the seed is mixed in thoroughly with old rooting medium saved from the previous summer's bench cleaning. This medium consists of 50% sand and 50% peat, by volume, and is thoroughly moistened.

After the seed has been thoroughly mixed with the old rooting medium, we bag the mixture in polyethelene plastic bags. Once bagged, the mixture of seed and rooting medium is placed in a refrigerator for three months in the case of the above Acer species and four months in the case of the above Carpinus species. The temperature of the refrigerator is kept at 41°F.

Following this three or four months period at 41°F. the seeds are sown in flats and then spotted off as they germinate.

Seeds of some plants require a period of high temperature followed by a period of low temperature before they will germinate. Such seed are said to have double dormancy. The term "double dormancy" is used to indicate that the seeds have two different types of dormancy. One is an impermeable seed coat, which can be made permeable for oxygen and water to pass through, by subjecting the seed to a diurnally fluctuating temperature of 60°-85°F. for two to four months. The other type of dormancy is the already mentioned internal dormancy, which can be overcome by subjecting the seeds to a temperature of 41°F. for three to four months.

Below are listed examples of seeds requiring such treatment.

Four Months at 60-85F.
Then three months at 41°F.
Cotoneaster bacillaris
Cotoneaster dammeri
Cotoneaster disticha

Three Months at 60-85°F.
Then three months at 41°F.
Sorbus alnifolia
Sorbus japonica

Four Months at 60-85°F.
Then three months at 41°F.
Viburnum hupehense
Viburnum lobophyllum

Seed of the above named plants are collected at the proper time in the fall, cleaned of their pulpy flesh in the Waring Blendor, mixed in thoroughly with the old rooting medium and then bagged in polyethelene bags. However, instead of placing the bags in a cold temperature (41°F.), such as was done with the maple seed, the bags were placed right on the open bench in the greenhouse.

Here they were subjected to a diurnally fluctuating temperature of 60°-85°F. The seeds were left on the open greenhouse bench, exposed to this fluctuating temperature for three months in the case of Sorbus species, and four months in the case of the Cotoneaster and Viburnum species.

Following this treatment of 60°-85°F., for three or four months the bags were removed from the greenhouse and placed in the refrigerator at 41°F. Here they remained for an additional three months.

At the end of this period the seeds were sown directly outdoors into prepared beds.

By using polyethelene plastic bags, seed propagation has been made much easier and also much faster. Once placed inside these plastic bags, with the medium suitably moist, the seeds are in no danger of drying out. Once placed in the refrigerator or on the open bench, they require no further attention, other than being changed from the warm to cold at the proper time, and being sown at the proper time. However, an occasional check to see that the medium is moist enough and that the seeds are not germinating prematurely, is advisable.

By using plastic bags for seeds that

(Continued on Page 21)

New York State Arborists Meeting — Cornell

The annual meeting of the New York State Arborists Association on January 11 and 12 was a well attended and enthusiastic meeting. Business was concluded during the morning session when reports were heard from several standing committees, including Program, Mr. Ed Rumsey; Publicity, Prof. A. M. S. Pridham; Membership, Mr. Paul Crandall; Auditing, Mr. Frank Karpick; Legislative, Mr. Francis Larmore. Dr. John Naegele reported as secretary-treasurer. The membership roll stands at 68 active and 20 associate members and a balance of $223 on hand.

Election of officers followed a report of the Nominating Committee and the casting of a unanimous ballot by the secretary upon the vote of the Association. Mr. Francis Larmore of Schenectady is our new President, Mr. Dewhirst Wade of Pleasantville, Vice-President and Dr. J. G. Matthysse again takes on the duties of secretary-treasurer.

The executive committee for 1954 is Adelard W. Bergeron of Niagara Falls, Paul Crandall of Rochester, H. Miller of Syracuse, Bob Lewis of Syracuse, Frank A. Conley of Schaghticoke, Kenneth Painter of Syracuse and Ira Wicks of Suffern.

Donald L. Collins, State Entomologist, opened the afternoon session with a discussion on Forest Insect Control in New York State. Pests of maple, red pine, beech and white pine were among those discussed. In his concluding remarks Dr. Collins noted the hundredth anniversary of professional entomology and a prediction by the first state entomologist that cutting of trees on state land would be limited just as it was in original grants by the English crown, particularly in relation to the original stand of white pine, most of which were 24″ or more in diameter. Such trees are few today. If you know of any, write your editor.

The remainder of the afternoon was devoted to a discussion of licensing arborists in New York State. It was generally appreciated that present day chemicals needed for pest control are composed of sufficiently dangerous materials so that their use should be limited to those who can demonstrate that they have adequate skill and knowledge to handle modern insecticides and fungicides. Mr. William Ozard of the Department of Agriculture and Markets at Albany indicated that some 20 states have already introduced regulation of custom spraying backed by inspection and filing of records on spraying undertaken. Paul Tilford, National Arborists Association, indicated that the Ohio arborists have tried six times to get a licensing law passed but that even after ironing out restrictive phases and clearing the host of detail that attends such legislation they have not succeeded except that a good degree of unanimity was attained on the type of legislation that would be practical among the members of the profession.

It was pointed out that approximately 85% of professional work in New Jersey is covered by certified arborists. In Connecticut 1091 have passed examinations leading to a license to operate as an arborist in that state.

The tenor of the meeting was that the New York State Arborists are in favor of the efficient use of modern pest control measures by competent operators whose demonstrated ability is above challenge. President Larmore is selecting a committee to work out a plan of action for submission to the Association, probably at their summer meeting in July.

Officers Elected at New York State Arborists Meeting Jan. 11, 12

Left to right, seated:

1. *Dr. A. M. S. Pridham, Editor, New York Shade Tree Notes, Cornell University, Ithaca, N. Y.*
2. *Mr. Dewhirst Wade, Vice-President, White Plains, N. Y.*
3. *Mr. Kenneth Painter, Retiring President, Syracuse, N. Y.*
4. *Mr. Francis Larmore, President-elect, Schenectady, N. Y.*

Left to right, standing:

1. *Mr. Ira F. Wickes, Director, Suffern, N. Y.*
2. *Mr. Robert Lewis, Director, Syracuse, N. Y.*
3. *Mr. Paul Crandall, Director, Rochester, N. Y.*
4. *Dr. John G. Matthysse, Secretary-Treasurer, Department of Entomology, Cornell University, Ithaca, N. Y.*

Present Trends and Needs of Arboriculture

Address by Paul Tilford to New York State Arborists Association

In discussing trends in arboriculture Paul Tilford reminisced briefly concerning the beginnings of the modern arboriculture industry during the 1920's when big tree moving and cavity work on old trees on estates formed a large part of

(Continued on Page 20)

USE THE PENCO® SPRAY PROGRAM

Insure maximum protection for shade and ornamental trees by planning the time and frequency of your spraying, and by selecting the Penco insect and disease control chemicals that best meet your needs.

Each of the Penco sprays listed here are carefully formulated to insure uniformity and maximum effectiveness.

Penco DDT Emulsion 34. This emulsion contains *three* full pounds of DDT in each gallon—34% DDT by weight. In this concentration, less solvent is required for a given leaf surface area, and the likelihood of solvent burn is proportionately reduced. This spray is especially effective in combating elm bark beetle, elm leaf hopper, Japanese beetle and other pests. Penco DDT Emulsion 25 (25% DDT per gallon) and Penco DDT W-50 (50% wettable powder) are also available.

Penco Hi-Gam® W-25 (25% lindane wettable powder). An effective weapon against aphids, leaf miners, lace bugs and pine bark aphids.

Penco Malathion Emulsion. For mite and aphid control on elm trees, to prevent build-up of these insects following the use of DDT sprays.

Penco Toxaphene E-60. For control of bagworm; contains six pounds of Toxaphene per gallon.

Penco Ferbam. An organic fungicide for control of plant diseases on fruit and ornamental plants.

For superior spray products, look to Pennsalt, a basic manufacturer of agricultural chemical products. Close control of production, plus both laboratory and field testing make it possible to provide you with products of dependable quality.

Service bulletins, to aid you in planning spraying programs, are available from your nearest Penco supplier, or direct from us. Penco technical representatives and salesmen will gladly work with you on your problems. Ample stocks of Penco agricultural chemicals are ready for prompt shipment from stock points in your area.

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Pennsalt Chemicals

Patronize the Advertisers and mention TREES

Western Shade Tree Conference— Oakland in May

Members of the National Shade Tree Conference, Western Chapter, held a preconvention meeting at Palo Alto and Stanford Saturday. There were 125 members from the area from Santa Barbara to Portland at the meeting.

The meeting was conducted by Maunsell Van Rensselaer of Saratoga, vice president, and was addressed by Dr. Lloyd E. Joley, director of the U. S. Plant Introduction Garden at Chico; Paul Crum, Palo Alto park superintendent; Linn Winterbotham, secretary-manager of the local chamber of commerce, and Elinor V. Cogswell, editor of the Times.

The morning session was conducted by Irwin Johnson, assistant Palo Alto city engineer, and the afternoon session by Allan H. Reid of the Palo Alto planning commission.

Frederic O. Glover, assistant to the president of Stanford University, addressed the conference's luncheon meeting at Rickey's, after which Reid conducted a tour of the Stanford campus. Special displays were arranged by Dirk Schroeder, superintendent of Stanford grounds, and by George Hood, City of Palo Alto nurseryman.

Among guests at the event was Frederick Law Olmstead, son of the late Frederick L. Olmstead, who landscaped the Stanford grounds, Miss Elizabeth McClintock, botanist at the California Academy of Sciences at Golden Gate Park, and secretary of the California Horticultural Society, was among scientists, park superintendents, landscape architects, and others attending the conference.

The western organization's annual convention will be held in Oakland May 5 through 8.

The Tentative Program for the meeting to be held in the Claremont Hotel, Oakland, follows:

WEDNESDAY, MAY 5, 1954

8:00 A.M. Past President's Breakfast—Garden Room
9:00 A.M. Registration—Lobby
10:30 A.M. General Session — Blue and Gold Room
12:00 A.M. Luncheon—Salem Room
2:00 P.M. Election of Officers and General Session — Blue and Gold Room

THURSDAY, MAY 6, 1954

8:30 A.M. Leave Claremont Hotel
11:00 A.M. Leave Garden Show
12:00 Noon Luncheon, Jack London Square
1:30 P.M Leave Jack London Square
2:00 P.M. *Outdoor Exhibits, Lakeside Park
5:00 P.M. Leave Lakeside Park for Claremont Hotel
8:00 P.M. Panel Discussion (Line Clearance?) — Blue and Gold Room

FRIDAY, MAY 7, 1954

8:30 A.M. General Session — Blue and Gold Room
10:00 A.M. Leave for Tour Calif. Spray Chemical Co. and Luncheon, Richmond Country Club, Courtesy Calif. Spray Chemical Company
1:30 P.M. Leave Richmond
2:00 P.M. General Session — Blue and Gold Room
5:00 P.M.
6:30 P.M. Cocktail Hour — Salem Room
7:30 P.M. Banquet, Installation of Officers, Entertainment—Salem Room

SATURDAY, MAY 8, 1954

9:00 A.M. Shade Tree Clinic
10:30 A.M. Practical Tree Maintenance (Holderness?)

This is No. 229—10" Boot

Still the best looking, longest lasting, most comfortable

Tree Trimmers Boot

for the money. It must be good—it has been copied so many times. The same thing in a 16" boot is our No. 216. Our No. 255X is a 16" engineers boot.

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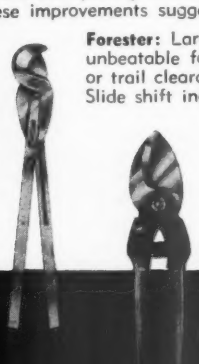
PORTER PRUNERS

Serve Professional TREE MEN *BETTER!*

Professional tree men find in Porter Pruners the qualities they themselves would specify — easy working, better results, durability in years of service. Here's a quick sampling:

Pole Pruners: Rugged yet lightweight head with sharp tool steel forged blades—cut close without bark damage—promote healing—cuts up to 1" green wood.

New Type M Pruner Head has now been further improved to give wider opening in slot, better spring action, etc. Ask to see these improvements suggested by the treemen.



Forester: Large size cuts up to 2" green wood—unbeatable for year round cutting, pruning, brush or trail clearance, also for dehorning young cattle. Slide shift increases cutting power up to 80%.

One-Hand Pruners: DuraCut and DuraShear—the ultimate in easy, fast, clean work on shrubs, bushes, vines—Plastisol cushion grips prevent slipping and blisters.

Your supplier has them or can get them. Write for complete catalog.

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DOW

BASAL BARK SPRAYING IS EFFECTIVE THE YEAR AROUND

DOW brush killers, applied to basal area, give better control than mechanical cutting

The result of successful basal bark treatment is shown here. Basal spraying of brush stems or tree trunks with Esteron® 245 or Esteron Brush Killer in oil is more economical than cutting, and regrowth is reduced to a minimum. Basal treatment is done with a knapsack sprayer or with power equipment. It gives satisfactory results with a wide range of species in any section of the country.

It should be remembered that basal bark spraying is effective during the summer months as well as in other seasons. It is especially useful as a follow-up to foliage treatment to control any resistant specimens and to take care of "misses" and new growths. Spraying cut stumps with either Esteron 245 or Esteron Brush Killer to prevent sprouting may also be done any time of year.

Inquiries on the control of brush and weed trees with Esteron Brush Killer and Esteron 245 will receive prompt attention. Dow sales and technical men are available for consultation and assistance. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

MIST SPRAY

(Continued from Page 7)

It does not seem necessary that every purchaser of a mist sprayer need know all of the mechanical details involved in building a satisfactory machine, but simple, understandable, directions for use, made from data compiled by the scientist and the manufacturer working together seems to be of importance.

The following illustrations demonstrate quite clearly the need for mutual understanding.

Note:

Air analysis tests should be made under the most perfect atmospheric conditions.

Natural limitations such as wind and thermal currents can then be overcome in proportion to the mechanical ability of the machine.

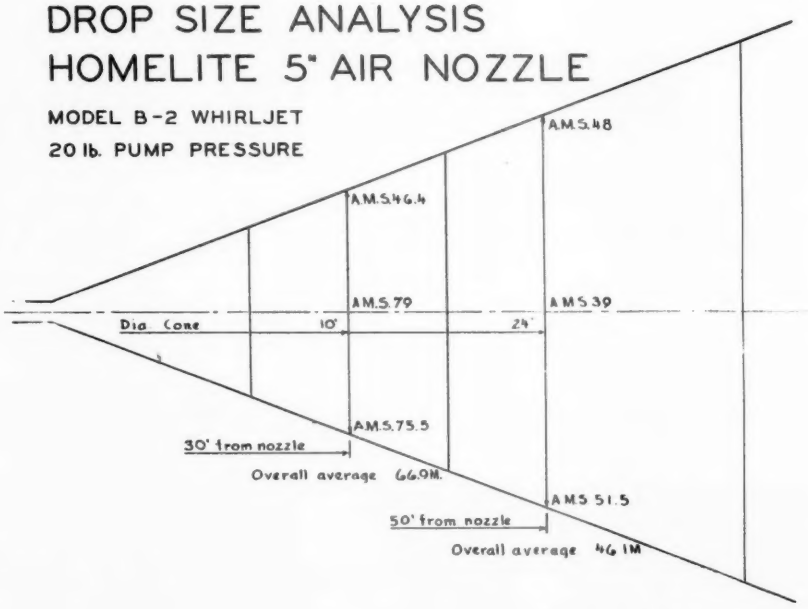

DIAGRAM No. 4

***OBJECTIVE:** To show drop size analysis and deposit pattern. Plates located as in Diagram No. 3.*

Pressure jet injected droplets slightly larger than spinner jet into air stream.

Overall average at 30 feet 66.9 M while at 50 feet average size was 46.1 M indicating that more material was being deposited closer to the machine than in Diagram No. 3.

1¾" Spinner at 10 lbs.						B.2 Whirl Jet Nozzle at 20 lbs.					
4	5	6	7	8	9	10	11	12	13	14	15
36	64	44	20	36	104	84	56	24	64	40	52
40	20	28	100	44	136	84	36	28	40	24	20
20	28	20	60	36	64	92	48	36	52	64	32
28	20	12	52	40	28	120	40	40	20	60	48
24	20	36	104	36	28	80	148	36	68	60	28
16	20	48	56	132	40	48	44	72	32	48	20
32	60	144	148	118	24	40	116	32	84	36	44
36	160	160	56	128	28	132	104	36	32	68	56
32	16	200	68	44	48	92	106	32	56	32	40
44	12	20	56	68	80	68	68	32	40	48	84
24	24	28	16	32	96	80	48	20	28	60	60
32	12	20	100	28	52	44	132	24	100	20	84
76	20	44	60	44	24	60	36	20	52	44	72
32	12	28	24	24	136	88	200	56	28	36	148
68	12	16	56	52	36	180	144	88	28	28	44
56	16	76	68	64	20	96	24	56	28	32	68
28	80	16	28	52	56	88	72	16	60	100	52
28	20	40	48	60	44	120	76	56	40	36	40
32	24	28	24	116	20	68	64	36	28	24	40
28	40	20	48	68	36	52	260	40	24	22	16
156	24	136	68	20	60	100	48	64	12	64	32
72	40	68	68	20	36	100	64	48	96	36	24
56	20	16	172	52	56	40	36	36	60	16	36
28	32	40	80	12	36	84	152	112	36	20	20
160	16	40	60	120	76	52	80	52	28	28	28
52	84	238	64	32	20	120	40	60	76	20	10
20	20	92	56	32	64	80	68	48	32	28	52
24	24	10	36	40	64	48	36	64	76	40	40
48	184	36	72	52	52	56	80	64	36	76	40
132	12	28	160	44	60	36	44	28	28	24	40
132	12	36	80	36	44	52	100	20	52	28	96
44	12	16	72	32	92	36	200	16	24	20	36
24	20	36	136	32	64	52	40	20	32	36	32
48	12	36	44	32	52	76	40	40	64	32	40
36	68	28	64	24	72	84	60	76	124	24	80
40	28	212	116	40	64	92	80	28	96	40	28
12	32	24	76	160	20	60	32	180	36	28	148
20	12	24	60	44	76	88	20	32	20	40	16
44	16	72		20	36	56	52	40	136	24	28
16	24	52		32	36	44	40	28	60	44	32
28	24	124		28	28	52	156	76	104	24	72
16	28	128		140	28	40	28	32	20	56	40
Total: 1920	1424	2521	2676	2266	2236	3164	3320	1944	2152	1630	2024
Ave.: 45.7	34	60	70.5	54.0	53	75.5	79	46.6	51.5	39	48

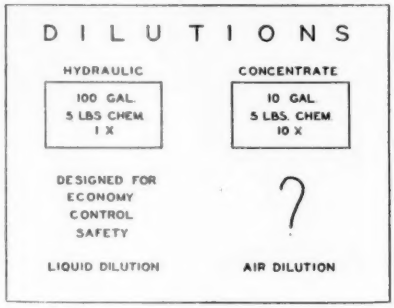

DIAGRAM No. 6

***OBJECTIVE:** A reminder that the greatest difference between hydraulic and mist spray is the lack of knowledge with reference to the proper air dilution of mist concentrate spray. NOTE: Air analysis tests should be made under the most perfect atmospheric conditions. Natural limitations such as wind and thermal currents can then be overcome in proportion to the mechanical ability of the machine.*

DIAGRAM No. 5

***OBJECTIVE:** Measuring of droplet size. As time was limited on the day that these tests were made only enough droplets to demonstrate the liquid break up of the material used were measured. Droplets measured were located on a section of the glass plate approximately 1/16 inch wide and 1 inch long.*

The Best Grade Peat-Humus In America

7 REASONS "GREEN THUMB" ASSURES YOUR BECOMING A GREENTHUMB USER

1. 97% pure, organic sedge reed, bacterially high content.
2. One cubic foot makes upward to 50 cu. ft. of good soil, or 15 cubic feet of rich organic soil.
3. Excellent natural nitrogen—readiness to use—going to work at once.
4. Delightful flowing into the soil in handling—uniform structure creates maximum economy.
5. Normal moisture holding, with gradual delivery only to soil and plants assure the maximum in plant development.
6. A product processed, based on 30 years proven continuous operation, has a ph of 4.5 to 5.5, that is quickly, easily and economically adjusted to needs of any plant material.
7. The most efficient and economical soil building nature product in existence.

"Green-Up America With Green Thumb Peat"

GREEN THUMB PEAT-HUMUS CO.

CAPAC, MICHIGAN

ROTARY CONTEST

(Continued from Page 8)

numbers, the trees are cut away and not replaced. Then the waters fall upon the bared hills and rush down the slopes instead of sinking into the rich open tree soil, carrying away vast quantities of the soil. The waters pass out to sea with their burden of soil or form malaria-laden swamps. Had the trees remained on the slopes, they would have held the water like a sponge, giving it up slowly as it was needed in the plants and lowlands, and letting it flow downward without devastating floods.

Trees not only have long roots that can reach underground water supplies that shallow vegetation cannot, but due to the large amount of foliage, they give off an enormous amount of moisture. For instance, the amount of moisture evaporated from an average white oak on a single summer day has been estimated to be 150 gallons of water.

Trees have been likened to a bank. A living growing tree increases in wood annually. The tree itself is like invested capital. The annual income on a managed acre of forest may reach 500 board feet or more. This interest can be collected (harvested) leaving the capital or principal intact.

The shade trees as a group are important to man's comfort and joy. Without them, all cities would be much the same, The commons in Boston, Lincoln Park in Chicago, Golden Gate Park in San Francisco are all made famous by their beautiful trees. Who can visualize New England without all its magnificent elms? These elms add charm and dignity to all the cities and towns. The American's pride of his Capitol is shown in the beautiful park surrounding it as well as in the building itself.

A community with many trees is a healthy community. Their tendency to help prevent temperature extremes has been demonstrated by forest experiment stations. Furthermore, a growing tree gives off oxygen and takes in carbonic acid gas, thus purifying the air.

Shade trees increase the value of real estate greatly, especially around homes. They combine beauty and sentiment for the home as nothing else can. Houses can be built very rapidly, but trees take a long time to grow. For these reasons, shade trees should be adequately cared for and protected from their enemies. Expenditures for such purposes are justified as a tree increases in value as the years go by.

How can one possibly place a monetary value on trees when they give us hundreds of material uses, protect us from the elements; cold, heat, flood destruction, conserve soil and water, purify the very air we breath and are a constant source of beauty and inspiration?

The Value of Trees

By Richard Johnson

Second Prize

If you were to go for a ride on a beautiful spring day, you would seldom stop and really think about trees. Perhaps you might pass a casual remark about their beauty. I want you now to think about some of the real values that trees have for us.

Can you see a tree not only as some wood, but as a house, some cartons of paper, a set of tires, some cans of turpentine, some maple syrup or sugar, or even a tar road, on which you might be riding, while enjoying these very trees?

We also get many highly priced foods from our trees. Think now of a platter of griddle cakes or waffles; for garnish it would need a liberal helping of maple syrup.

Few of us stop to think that this is the product of one of our most beautiful trees, the sugar maple. The collecting, processing and marketing of maple syrup and sugar is a multi-million dollar business. Would you think of trees as you are eating your favorite ice cream, candy or pastries that could be flavored or garnished with walnut meats? These come from another well-known tree. The list of food-producing trees is long. The pecan nuts from the hickory species are especially popular. They are in great demand as are the many wonderful fruits we get from our trees.

Now, will you pretend you were making this same trip on a hot summer day, to have a picnic? You would ride until you found just the right spot to eat. This would be, without a doubt, under a beautiful shade tree, and, we'll say, on the property of a farmer. Here we realize not only the value of our shade trees, but what the tree means to a farmer.

First, it is a well-known fact that trees and general landscaping increase the value of property. Second, to state a few facts from the Shade Tree Digest, "The value of trees to the farmer was illustrated in a recent finding by Earl G. Maxwell, Forester at the University of Nebraska. In a survey of some 300 Nebraska land owners, he discovered that trees are worth an average of $325.76 a year to the farm on which they are grown.

"Trees are most highly valued as a protection to livestock, which is figured at an average annual worth of $197.06. Their value in increasing crop production is averaged at $43.03, while they are worth $29.63 annually for the protection they give to buildings and equip-

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ment. Broken down further, the annual worth of trees is $22.67 for the production of fuel wood, $13.40 for the increased garden production, $13.53 for fuel saved, and $6.44 for their use as poles and posts."

Now, as the fall of the year comes, you would take your ride to see the beautiful foliage, for which the Berkshires are so famous. While one week you might be enjoying this beauty, by the following week or so, the leaves have begun to fall. What do you see in these leaves? A day's work, a nuisance to be disposed of, or materials for a bonfire? Or can you see the ripened plant cells of which they are composed, hidden dollars, chemicals necessary for plant growth, or elements vital to soil? All these values and more are there. Leaves when dry are twice as rich as any other fertilizer. They produce such valuable chemicals as nitrogen, phosphorus, potash and calcium through the process known as composting. These elements can be reclaimed and returned to the soil.

By this time, the ground has begun to freeze, and winter is on its way. The evergreen trees now become of main importance. Their beauty against a snowy background makes a beautiful scene. With winter getting under way, Christmas draws near and we must go out to select our tree. Where to go and what kind of tree to get is the question. There are more than 28 million Christmas trees distributed in this country, according to recent reports of the United States Department of Agriculture. Most of the Christmas trees produced in the U. S. are cut from privately owned lands; generally, from woodlands or pastures, where the trees have grown from natural seedlings. Christmas tree farms, on which evergreens are planted, grown, and cut for use as Christmas trees, are increasing in importance. There is reported to be the amount of 100,000 acres in Christmas tree plantations now, producing about 1 and one half million trees annually.

Nearly all kinds of evergreens are used for Christmas. The five leading kinds, based on production figures, are:

(Continued on Page 18)

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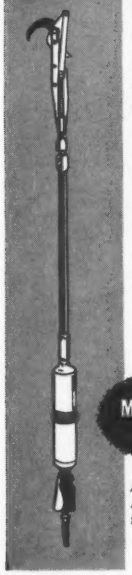

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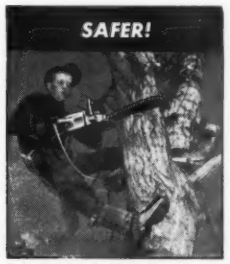
Powerful 10 amp. motor Saws up to 28" dia. tree at 1400 ft. per minute chain speed.



Specially designed gripper teeth prevent jump or kick-back.

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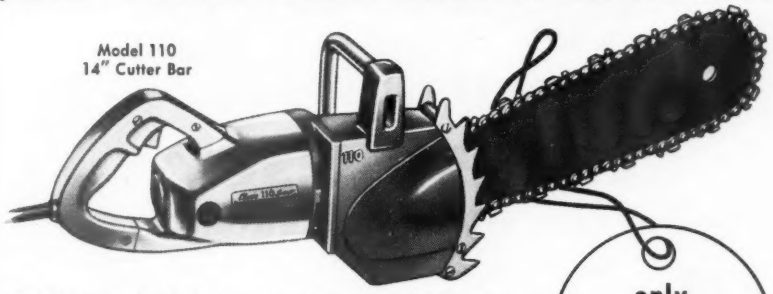

Only big-capacity chain saw at such a low price! Measures 30" long by 6½" wide—yet cuts trees up to 28" in diameter. Weighs 18 lbs. Has famous Oregon® Chipper Chain—stays sharp twice as long. V-design improves leverage . . . keeps blade out of dirt when saw is set down. Heavy-duty precision ball bearings. Oversized worm gears. Instant starting—practically no servicing. Operates off standard 115 V. AC/DC line. Two portable field generators also available.

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Rotary Contest

(Continued from Page 17)

Balsam fir, douglas fir, black spruce, red cedar and white spruce. In addition, 18 other kinds are more or less commonly used. The Christmas tree industry is a $50,000,000 business, according to current retail prices.

Did you realize as you went to get your tree how really important it was?

I would like to close my story now by quoting a pledge, written by L. L. Foreman, of Santa Fe, New Mexico, for Outdoor Life Magazine.

"I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters, and wildlife."

The Significance of Arbor Day

By Bruce Cronnell
Third Prize

"Summer or winter, day or night
Trees are ever a new delight;
They give us peace and they make us strong,
Such a wonderful balm to them belongs."

In order to know and to be able to understand the significance of Arbor Day, first let us understand that this day is one set apart to encourage people to plant trees voluntarily. It is celebrated very often as a school festival.

Arbor Day is not celebrated usually as a legal holiday. However, in Florida, Nebraska and Rhode Island, Arbor Day is a legal holiday. In the other forty-five states it is not a legal holiday except in certain states by proclamation of the governor. The Commonwealth of Massachusetts celebrates Arbor Day on on the last Friday in April. (Editors Note: Arbor Day is now legally observed on the *Last Friday in April* in the following States; Massachusetts, Maine, Rhode Island, Connecticut, New Jersey, Ohio, Indiana, Illinois, Wisconsin, South Dakota and Nevada.) Most of the other northern states celebrate this day in April or in early May. Many southern states designate a day in the winter for the celebration of Arbor Day. In Canada, Arbor Day is celebrated on the first Friday in May.

The custom of this celebration was started when, in 1873, the Nebraska State Board of Agriculture adopted the following resolution:

"Resolved, that April 10, 1873 be and the same hereby especially set apart and consecrated for tree planting in the State of Nebraska, and that the State Board of Agriculture hereby names it Arbor Day. And to urge upon the people of the State the vital importance of tree planting hereby offers a special premium of $100 to the Agricultural Society of that county in Nebraska which shall upon that day plant properly the largest number of tree, and a farm library of $25. worth of books to that person who on that day shall plant properly in Nebraska the greatest number of trees."

When the State of Nebraska originated the idea of celebrating an Arbor Day, it lacked the many trees it needed. On the first Arbor Day in that state over 1,000,000 trees were planted.

Julius Sterling Morton, who was the first to propose a regular Arbor Day, believed that the trees would be useful as wind breaks and to conserve the moisture in the soil of his State of Nebraska. Since it was much his idea to have an Arbor Day, Arbor Day in Nebraska is celebrated on his birthday, April 22.

It is very important that we plant trees on Arbor Day. The reason for this is that conservation of our natural resources is one of the foremost important problems to face our nation in the next fifty years. If the land of our country is not preserved, the future generation will be in quite a serious predicament. Most far-sighted people have known for some time that conservation of our nation's forests must be practiced on a wider scale than it ever has been before. In the past we have turned beautiful garden-like lands into deserts. If this has been possible, why can't we transform the deserts into gardens, scientifically planted?

Many of our towns and cities have blighted areas which can be made beautiful and green by the planting of trees. Most of our cities, with a few exceptions, are rather ugly. They are especially ugly compared with English cities, where a confined area had to be planted, and the people had to be plant conscious if the population of England was to live with any amount of comfort and beauty.

Many of our cities have "clean-up campaigns," but they are not very good unless the areas are planted with trees and the inhabitants of our cities are made plant conscious.

It is important that trees and shrubs

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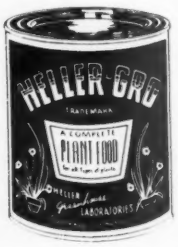

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are planted on factory grounds to help improve the morale and comfort, as well as the recreational facilities, of the workers.

Real estate values are improved by tree-lined streets. They also help to improve the climate and livability of homes. Many more city parks, more community forests, and more recreational areas are sorely needed.

The planting of trees would be very important in case of an atomic or hydrogen bomb explosion. In event of an explosion, trees, bushes and shrubs would be very important in cutting down the direct effect of flash burn.

If we have any love, whatsoever, for our community we will try to plant, conserve, and beautify the land. If we do not do this, our country will go the same way of other countries that by spoiling their land have robbed themselves and left deserts in their wake.

The trees in our country are being destroyed much faster than they are being replanted. Arbor Day should help us to remember this fact and we should try to plant at least one tree on Arbor Day. If we would do this, Arbor Day would be very successful and our great country's natural resources would be greatly improved.

"—So living or dying, I'll take my ease
Under the trees, under the trees."

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The unit is available for either truck or trailer mounting, or can be purchased in a factory mounted trailer model.

Write for the new Rotomist catalog for more complete information.

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NEW YORK ARBORISTS

(Continued from Page 10)

the dollar volume of the arborist business. An example was cited of one arborist who reported 98 jobs per year of over $500 per job but in 1950 reported 400 jobs averaging $125. Spraying and tree moving were not included in these figures. Today there are many smaller arborist companies doing a fine personalized business within local areas. About 37% of the dollar volume comes from pruning, another 20% from spraying, 12% from planting, 10% from "take down, 9% from fertilizer and 2% from cavity work.

Arborists spread their localized activities into other allied business fields such as the landscape and nursery business. Arborists find clients among home owners, municipalities and utility companies.

Mr. Tilford is optimistic about the future of the arborist business. The trend toward expanded home and public building, the renovation of older city plantings and the trend toward revised thinking about trees by utility companies and home owners all mean new business. Large forest trees are out of scale for modern needs in many cases and there is room for considering other than conventional shade tree types for modern planting.

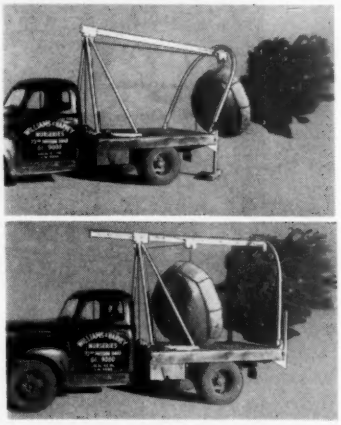
What is needed Mr. Tilford pointed out is first, a lot of good publicity about trees so that the public can have some appropriate knowledge about them and about good and poor tree care. Continued community endeavor by arborists is good promotion. Talks by arborists before service clubs, at Arbor Day and at other times are especially helpful. Professional publicity has helped put across the A.A.N. Plant America campaign. Mr. Quadland has been responsible for such publicity and the Ohio arborists are retaining him part time for special newspaper and magazine stories on trees this year.

Mr. Tilford stressed that what is needed also includes a way of improving the caliber of employees in the arborist business. Better pay is part, better working conditions and sponsoring the feeling that the work of the arborist is important to the community would all help.

Encouragement of research to help solve the arborist's problems in keeping trees healthy by spray and fertilizer programs should also be encouraged.

In thinking of using the right tree in the right place, Mr. Tilford discussed the following as illustrative of shade trees suitable for street and modern home planting.

(Continued on Page 22)



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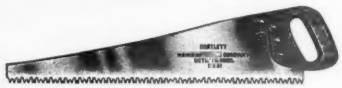

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PROPAGATION

(Continued from Page 9)

require a high temperature period followed by a low one, a great deal of time can be saved. For example, Sorbus japonica seed, handled the way just described above, will germinate in six months. Where, on the other hand, the same seed planted outdoors in the fall as soon as it is collected and cleaned, would not germinate until one year and a half later if it had been sown in the fall, or not until one year later if it had been stored dry all winter and sown in the spring.

This is due to the fact that the seeds require a period of high temperature, followed by a period of low temperature.

Therefore, if you planted the cleaned seed in the fall it would not receive enough high temperature to break down the seed coat before winter and it would have to wait until the next summer before it would receive its high temperature period, which would break down the seed coat. Then it would have to go through the next winter before it would receive its cold period which would overcome the internal dormancy. Once these two conditions have been fulfilled in the right sequence, hot then cold, the seed will germinate in the coming spring.

Cold stratification before warm stratification will be of no use, as witness the fact that no germination occurs the first spring following fall planting of cleaned seed. The impermeable seed coat must be broken down first by high temperature, allowing water and oxygen to penetrate into the seed where their presence, combined with the cold temperature stratification which would follow, will result in good germination the following spring.

In conclusion then, by treating the above mentioned species these various ways with emphasis on pretreatment and the polyethelene plastics, we here at the Arnold Arboretum found that seed propagation can be made much easier and much more profitable.

(1) Misc. Pub. 654 U. S. D. A. Woody Plant Seed Manual P. 35-36.

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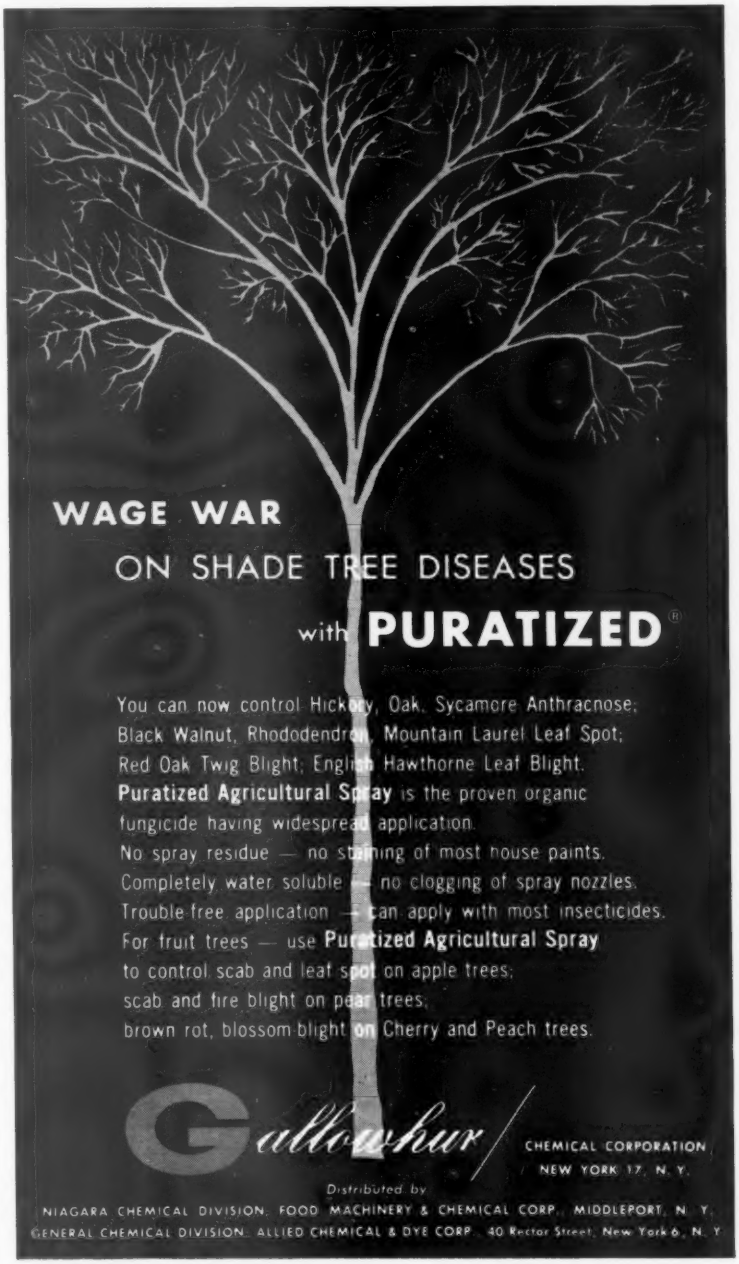
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GENERAL CHEMICAL DIVISION, ALLIED CHEMICAL & DYE CORP., 40 Rector Street, New York 6, N. Y.

Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted Falls, Ohio.

THE NEW TREE EXPERTS MANUAL, by R. R. Fenska. De La Mare Garden Books, 448 W. 37th St., New York 18. 238 pgs. illus. $5.00.

A ready reference manual of Directions, Facts and Figures on the Care of Shade and Ornamental Trees never before presented under one cover.

Starts at the beginning—the parts of a tree and their functions, and the growth of trees—followed by details on watering, soils, transplanting, pruning, bracing and cabling, tree wound dressing, surgery, etc.

Informative chapters on correctly diagnosing tree troubles and effective remedies to be applied; all the different types of sprays and how to use them; correct formula for a balanced tree food; complete list of insects attacking shade and ornamental trees. A unique Mixing Chart, showing the materials which may and may not be used in one solution, and a chapter on Shade Tree Laws —nowhere else compiled and condensed as here—are special features of the book.

Home owners, nurserymen, landscape architects, fruit growers, city foresters, tree wardens, municipal officials, teachers, tree repair organizations, etc. will read and profit by this volume.

HISTORY OF THE ROSE, by Roy E. Shepherd. The Macmillan Co., New York. 264 pgs. illus. $4.75.

This is the most complete history of the rose ever to appear in a book. It traces the many forms of this flower from the first recorded appearance of each one down to the present day.

As horticultural history, it transcends the folklore and legends which have grown up about the rose. The narrative of discovery and gradual development of new roses into some of the glorious blooms of modern gardens is a story that needs no ornamentation of fancy.

Mr. Shepherd divides the roses into eleven major botanical groups. First giving the general characters, he then describes the many species and hybrids within each group. The derivation of each different kind seen in gardens today is clearly shown; cultural notes are given when they are unique.

One group includes the China and the Tea Rose, another the Multiflora and several native American species. The French, Cabbage, Moss, Damask and White roses are together in one section, Cinnamon Roses and their relatives in still another. The three large modern groups of garden roses—the Hybrid Perpetuals, Hybrid Teas, and Polyanthas — appropriately conclude the book. Twelve pages of illustrations show, in 26 fine photographs, representatives of the roses which are of greatest historical significance. A chart shows the period of dominance of 26 kinds of garden roses over a period of 350 years. In a seven-page bibliography are listed 175 titles of books and articles concerning the history of roses.

A general introductory chapter explains the place of the rose in civilization. Here are interesting sidelights on the roses mentined in the Bible and their authenticity, roses cultivated by the Romans for their floral beauty, and by medieval monks for their medicinal value, and the roses found in Cretan frescoes of the 16th century B. C.

Mr. Shepherd's book will be invaluable to all rose enthusiasts, gardeners, and horticulturists for its interest, authenticity and comprehensiveness.

AMERICAN FOREST MANAGEMENT, by Kenneth P. Davis. McGraw-Hill Book Co., New York. 482 pgs. illus. $7.50.

In this concise yet thoroughly practical text, the author provides a systematic treatment of the organization and management of forests for continued timber production and of valuation principles and methods applied to forest management problems. Without sacrificing technical thoroughness and adequacy, the author cuts through the formalism which has surrounded management methods and techniques for the past several years, and encourages people to think with balance and directness about management problems.

It is the author's contention that forest management and forest valuation are complementary and should be under the same cover. Knowledge of techniques of managing a forest, stressed in Part I, show what is physically possible, while value considerations, emphasized in Part II, largely determine what can be done in a particular situation. Both are essential to a balanced and practical managerial viewpoint, the furtherance of which is the basic aim of the book.

Here is a book that is not regionalized or localized—it is the result of the extensive studies of a westerner living in the east who is acutely aware of the forestry problems throughout the United States and Canada. A valuable reference book or textbook for students and professional foresters, this distinctive addition to the American Forestry Series will be welcomed by all concerned with the field of forestry.

NEW YORK ARBORISTS

(Continued from Page 20)

Tilia cordata	Littleleaf Linden
Cercidiphyllum japonica	Katsura-tree
Crataegus phaenopyrum	Washington Thorn
Koelreuteria paniculata	Goldenrain-tree
Fagus sylvatica fastigiata	Fastigiate European Beech
Oxydendrum aboreum	Sourwood
Cladrastic lutea	Yellowwood
Aesculus carnea brioti	Red Horsechestnut
Robinia Pseudo Acacia umbraculifera	Globeheaded Locust

Panel Discussion of Licensing Arborists in New York State

Several situations in regarding to licensing were discussed:

1. Licensing in Connecticut where an examining board of five receives applications for examination and gives examinations twice yearly at a fee of $10. The exams are designed for those charged with decisions on feeding, fertilizing, thinning, bracing, cavity work and protection of fruit, shade, forest and ornamental trees from damage by disease or insect pests by spraying or other method. Foremen as well as management responsible for contracts must have a license. The license may be revoked where fraud or substandard work is clearly established. Joe Dietrich of Greenwich, Conn., made the report and has copies of the law, rules and regulations pertaining to licensing arborists. The law was passed in 1919 and was followed shortly thereafter by laws in Alabama, Louisiana, Maine, New Hampshire and Rhode Island.

2. Certification that the holder of a certificate has satisfactorily demonstrated his knowledge and skill carries a measure of official approval of ability but is regarded as less restrictive than licensing. Certification examinations do bring about official recognition of the industry and of the skills and technical knowledge required to operate fairly and efficiently for private and public clients.

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PERISH THE THOUGHT—

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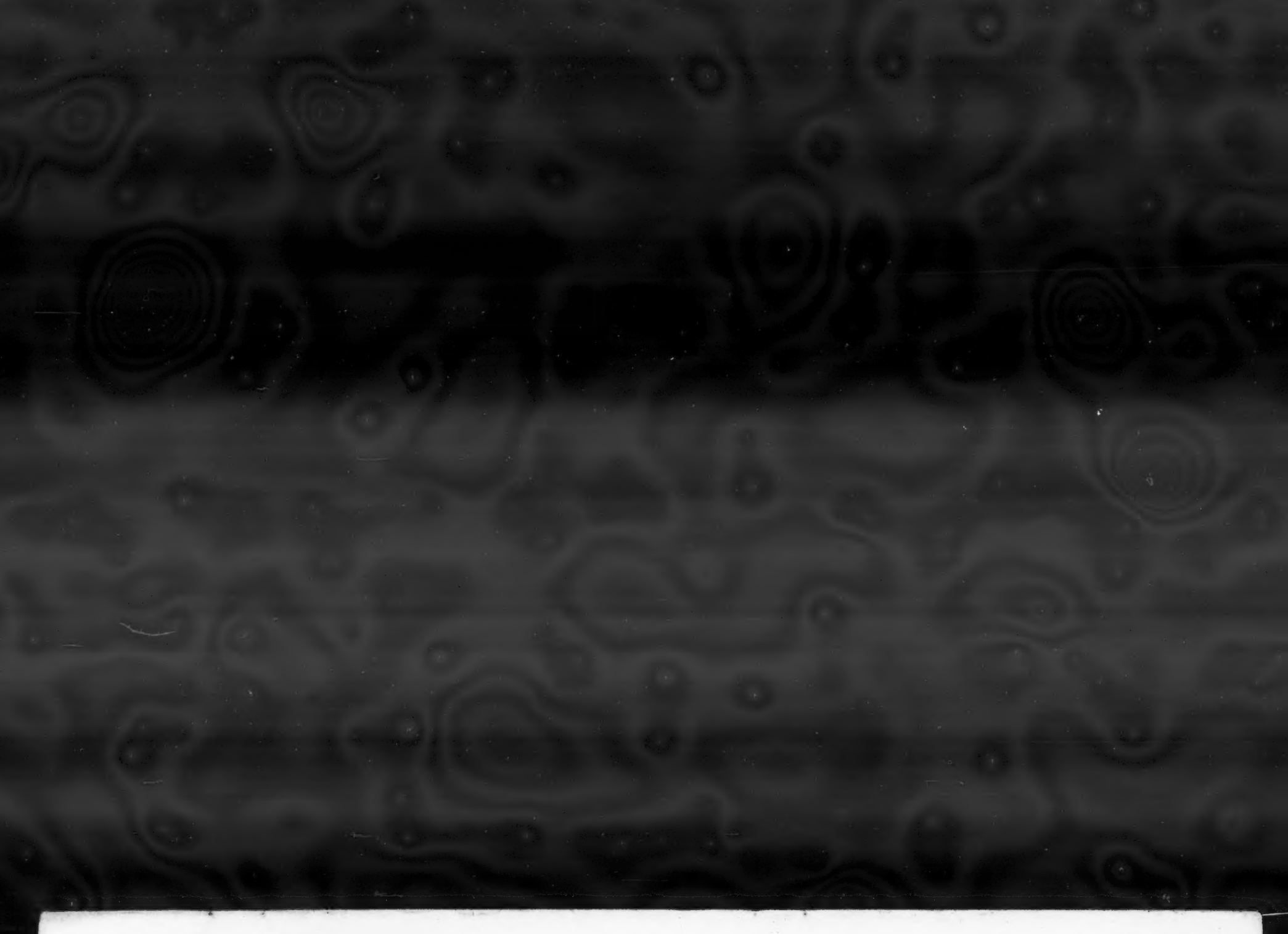
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